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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,142	02/07/2001	Yoshimoto Ishikawa	JP919990298US1	8589

7590

01/10/2003

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EXAMINER

TON, ANABEL

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 01/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/778,142

Applicant(s)

ISHIKAWA ET AL.

Examiner

Anabel M Ton

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-8 and 16-19 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 9-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-5 and 9-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Because of their dependency, claims 2-5, 10, 11, 14 and 15 are necessarily rejected

3. Claim 1 recites the limitation "illuminating said second light to said reflecting surface of said special light modulator tilted at a second angle" in line lines 7-9. Likewise, claims 9 and 12 recite the same limitation. There is insufficient antecedent basis for this limitation in the claim. A first and second light emitting means are shown with a first and second spatial light modulator. An embodiment of a first and second light emitting means projecting onto a reflecting surface of a single special light modulator, as recited in claims 1, 9 and 12, is not shown.

4. Claim 13 recites the limitation "directing said second illuminating light to said projection lens by tilting the micro mirror at a second angle" in line 7. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,5,9,10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Poradish et al (5,612,753).

7. Poradish et al discloses the claimed invention: a micro mirror type spatial light modulator for projecting light, emitted from a light source, on a corresponding area by tilting a reflecting surface a first light source for emitting a first light which is projecting on a corresponding area by tilting a reflecting surface; a first light source for emitting a first light (10a) which is projected on said corresponding area by illuminating said first light to said reflecting surface of said spatial light modulator tilted at a first angle;( a second light source for emitting a second light which is projected (10b)and a control section for controlling said first light emitted from said first light source and said second light emitted from said second light source(30 a,30b). Although the prior art cited does not recite a single spatial light modulator for both first and second lights to be emitted onto, it does teach of the first and second light sources being emitted onto a respective spatial light modulator, furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to emit a first and second light onto a single spatial light modulator since it has been held that omission of an element and it's

function in a combination where the remaining elements perform the same functions as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

***Allowable Subject Matter***

8. Claims 2-4,11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. Claims 13-15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

10. Claims 6-8 and 16-19 are allowed.

11. The following is a statement of reasons for the indication of allowable subject matter: The prior art cited does not teach the following:

- The control section controls the first and second light sources so that they are alternately driven to emit light;
- A projector comprising: *a first light source for emitting light in pulse form; a second light source for emitting light in pulse form*, said first light source and said second light source being switched alternately; a spatial light modulator equipped with *a micro mirror tiltable at a first angle and a second angle*, light modulation being performed by tilting said micro mirror; a projection lens on which the light reflected by said micro mirror of said spatial light modulator is incident; and a control section for controlling said first light source so that the light emitted from said first light source is modulated and directed to said projection lens with said micro mirror tilted at said first angle, and for controlling said second light source

so that the light emitted from said second light source is modulated and directed to said projection lens for each of said three-color fields.

- A method for directing light with three primary colors to a projection lens by employing a spatial light modulator which has *a first state in which a micro mirror is tilted at a first angle and a second state in which said micro mirror is tilted at a second angle*, said method comprising the steps of: constructing three color fields for each frame forming an image by said light with three primary colors; and directing light, modulated by employing *said first state of said spatial light modulator, and light, modulated by employing said second state of said spatial light modulator*, to said projection lens for each of said three-color fields.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anabel M Ton whose telephone number is (703) 305-1084. The examiner can normally be reached on 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

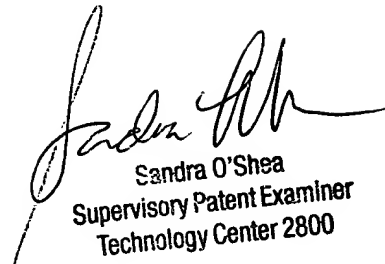
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Application/Control Number: 09/778,142  
Art Unit: 2875

Page 6

Anabel M Ton  
Examiner  
Art Unit 2875

AMT  
January 7, 2003



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